

Natural

-----2.8----->
acgcaaaggaggcgacatggcagggttacggcgctaaaggaatccgaaa
<--3-RBS--><-----3-----

Engineered

acgcaaGgggagAcgacaCggcagggttacggcgctaaaggatcggccgcaaagggagggcgacatggcagggttacggcgctaaa
-----2.8-----><D28R | D29L><--3RBS--><-----3-----

Mol Syst Biol. 2005;1:2005.0018. Epub 2005 Sep 13,
Refactoring bacteriophage T7.
Chan LY, Kosuri S, Endy D.

AMINO ACID	CODE (1 ch)	CODE (3 ch)	POLAR REQ	H/P
Alanine	A	Ala	7.0	H
Arginine	R	Arg	9.1	P
Asparagine	N	Asn	10.0	P
Aspartic acid	D	Asp	13.0	P
Asparagine or aspartic acid	B	Asx		P
Cysteine	C	Cys	4.8	P
Glutamine	Q	Gln	8.6	P
Glutamic acid	E	Glu	12.5	P
Glutamine or glutamic acid	Z	Glx		P
Glycine	G	Gly	7.9	P
Histidine	H	His	8.4	P
Isoleucine	I	Ile	4.9	H
Leucine	L	Leu	4.9	H
Lysine	K	Lys	10.1	P
Methionine	M	Met	5.3	H
Phenylalanine	F	Phe	5.0	H
Proline	P	Pro	6.6	H
Serine	S	Ser	7.5	P
Threonine	T	Thr	6.6	P
Tryptophan	W	Trp	5.2	H
Tyrosine	Y	Tyr	5.4	P
Valine	V	Val	5.6	H

	U	C	A	G	
U	Phe	Ser	Tyr	Cys	U
	Phe	Ser	Tyr	Cys	C
	Leu	Ser	Stop	Stop	A
	Leu	Ser	Stop	Trp	G
C	Leu	Pro	His	Arg	U
	Leu	Pro	His	Arg	C
	Leu	Pro	Gln	Arg	A
	Leu	Pro	Gln	Arg	G
A	Ile	Thr	Asn	Ser	U
	Ile	Thr	Asn	Ser	C
	Ile	Thr	Lys	Arg	A
	Met	Thr	Lys	Arg	G
G	Val	Ala	Asp	Gly	U
	Val	Ala	Asp	Gly	C
	Val	Ala	Glu	Gly	A
	Val	Ala	Glu	Gly	G

But see:

<http://benfry.com/aasd/applet/>

for a really great reworking of the above!